was well below normal providing fewer birds for the hunter than the previous year.

The field work for the six-year cooperative study on Appalachian grouse was completed in September 2002, and final results and analysis are examining the effects of late season hunting on grouse as well as many habitat and environmental effects. This multi-state cooperative project is producing a wealth of grouse research information in the form of dissertations, theses, scientific articles, popular publications, and presentations.

## Warmwater Fish Management

The Warmwater Fish Management Unit is responsible for providing maximum fishing opportunity to meet increasing recreational demand and for protecting and managing approximately 98,000 acres of warmwater streams and more than 22,000 acres of public impoundments.

To meet this challenge, the warmwater program is divided into five areas:

- surveys and inventories of existing fishery resources, providing essential data to assess and develop management programs;
- protection of fish habitat, placing intensive efforts toward the review and comment processes of various state and federal permits for proposed activities that could possibly degrade streams and lakes;
- enhancement and development of fisheries, increasing production and use of fisheries through stream and lake improvements, and providing additional opportunities by stocking desirable fish species;
- development of public access to fishery resources, ensuring adequate public access to existing streams and lakes, and acquisition and/or development of new lakes; and

5) outreach and information development, providing the public with material concerning fishing and fish management programs.

## Muskellunge

A total of 12,820 fingerling muskies was stocked in 11 streams and 6 lakes in 2003. Advanced fingerling muskies were stocked for the second time in 2002. West Virginia's musky fishery is primarily sustained by this annual stocking program. Nearly 90 percent of the reported musky catches in 2002 and 70 percent of those qualifying for trophy citations were caught from stocked streams or lakes.

#### Walleye

More than 150,000 walleye fingerlings were stocked in 8 lakes and 2 rivers in 2003. The walleye were obtained from New York, Pennsylvania and Virginia. The walleye stocking program is designed to establish reproducing populations of this sport species in suitable waters throughout the state. More than 75 percent of trophy walleye catches in 2002 and approximately 40 percent of all trophy catches since 1976 were from stocked waters.

#### **Channel Catfish**

More than 42,000 advanced channel catfish fingerlings reared at Palestine and Apple Grove hatcheries and were stocked in 22 waters in the fall of 2002. Fishable populations are established in the majority of these waters with excellent catfishing found in Beech Fork, Burnsville, East Lynn, New Creek, Plum Orchard, Stephens, Stonecoal, Stonewall Jackson, and Warden lakes.

Eleven (11) other lakes were stocked with 9,600 pounds of adult channel catfish in June 2003. The adult catfish were purchased with funds provided from reimbursements for pollution-caused fish kills.

#### **Hybrid Striped Bass**

A total of 21,850 hybrid striped bass fingerlings was released in the Ohio River in 2003. Hybrids over five pounds, with some up to 12 pounds, are regularly being caught from stocked waters. The New and Kanawha rivers also are providing excellent opportunities to land trophy hybrids.

#### **Paddlefish**

Efforts to restore the paddlefish in West Virginia continued in 2002 with the successful collection and spawning paddlefish from the Ohio River. Paddlefish were hatched and raised at Palestine Hatchery and more than 4,000 advanced paddlefish fingerlings were stocked in the Kanawha, Little Kanawha, Monongahela, and Ohio rivers.

#### **Largemouth Bass**

More than 35,000 largemouth bass fingerlings were stocked into North Bend Lake, a new impoundment in Ritchie County, and in three small impoundments to enhance existing populations in 2003.

## Warmwater Hatchery Developments

Construction of the new Apple Grove Hatchery building was completed in 2002. Staff continued to install plumbing and fish rearing equipment in 2003. Production continued at Apple Grove and partially met warmwater fish stocking needs in 2003.

Electrical supply improvements were completed during 2002 and 2003 at Palestine Hatchery in Wirt County. Palestine Hatchery continues to be an integral component of West Virginia's warmwater fisheries management program, supporting sport fish production and research opportunities.

#### Reservoir Management

Fish populations were monitored in Beech Fork, Bluestone, Burnsville, Cheat, East Lynn, Jennings Randolph, Mt. Storm, R.D. Bailey, Stonecoal, Stonewall Jackson, Summersville, Sutton, and Tygart lakes. These inventories provide the basis for determining management needs and evaluating management measures.

Each year, deviations are made from normal reservoir operations at various impoundments. Some of these events are planned in advance, while others are unforeseen and require immediate action. Coordination between the Wildlife Resources Section and agencies responsible for these reservoir projects result in minimal impacts to fish and wildlife and maximum recreational opportunity during such opera-

tional changes. Information upon which to base these fish and wildlife considerations is available as a result of the section's reservoir monitoring program.

Volunteers from several fishing clubs, civic groups, and the U.S. Army Corps of Engineers provided materials and labor to assist the Warmwater Fisheries Unit in constructing and maintaining fish attractors at Burnsville, Mt. Storm, Stonecoal, Summersville, Sutton, and Tygart lakes. Additional habitat improvement measures were implemented at Burnsville, Stonewall Jackson, Summersville, and Sutton lakes with the planting of annual grasses as seasonal habitat improvement.

## River, Stream and Lake Research and Surveys

Stream and lake fisheries management activities continued in 2002 with emphasis on new research efforts. Small-mouth bass population assessments began on the Greenbrier, New, and South Branch of the Potomac rivers. Muskellunge population assessments continued on the Buckhannon River and Middle Island Creek. Assessment of black bass and channel catfish population characteristics continued on small impoundments in 2002.

Fish restoration, and aquatic habitat and fishing access improvements continue in conjunction with the Marmet Locks expansion project on the Kanawha River. Sauger, walleye, paddlefish, and shovelnose sturgeon were stocked in the Kanawha River as part of fishery enhancement and restoration efforts associated with Marmet Locks and Dammitigation.

Fisheries management staff is coordinating a significant fisheries research project on the Ohio River. The project is a product of the Division of Natural Resources' participation in the Ohio River Fish Management Team and is being funded by the U.S. Army Corps of Engineers through the Ohio River Mainstem Systems Study. The research is focusing on the impacts of navigation locks and dams on sportfish and winter habitat use by Ohio River fish. The research is being conducted by several universities and state agency staff.

## Stream and Lake Access

Public boating and fishing access facilities were enhanced on the Kanawha River at Leon and St. Albans; on the Ohio River at Fish Creek; and on Buffalo Fork, Stonewall Jackson, Tygart, and Upper Mud lakes.

#### **Fishing Tournament Coordination**

Data on 2002 catch rates, fishing effort, and fish mortalities during 539 organized fishing tournaments were collected from 42 bass clubs and 75 open tournament sponsors. Tournaments were held at 33 West Virginia sites, including 334 on lakes, 119 on the Ohio River, 36 on the Kanawha River, and 46 on the Monongahela River. Tournament fishing pressure, 130,240 angler hours, declined by 4,529 hours from 2001. When comparing year 2001 results to 2002, average tournament catch rate increased from 0.13

to 0.14 fish per angler hour in lakes and increased from 0.08 to 0.13 in rivers.

## **Trophy Fish Citation Program**

The Trophy Citation Program recognized anglers who caught 1,423 fish, representing 25 species, that qualified as trophies in 2002. Of 26 waters (private lakes are counted as one water) yielding 10 or more fish citations, 62 percent were from streams and rivers, 16 percent from small public fishing lakes, 12 percent from private lakes and ponds, and 10 percent from large public lakes.

#### Fish Kills

The Division of Natural Resources requested financial reimbursement from responsible agents for 3 fish kills in 2002 (see following table).

Fish Kills – 2002								
Stream or Lake	Date	Cause	Fish l Number	Killed % Game	Severity Miles Degree			
Crooked Creek Putnam County	6/29/02	Anoxic Discharge	284	1	0.35	Total		
Polk Creek Lewis County	9/11/02	Raw Sewage	1,471	1	0.25	Total		
Slab Fork Raleigh and Wyoming counties	10/01/02	Mine Discharge	3,078	5	1.1	Total		

# Wildlife Resources Section

Species and Hatchery/Source	Number	Size	Location				
Muskellunge (P)(A) (BP)(B)	12,820	fg	Burnsville, East Lynn, North Bend, Stonecoal, Stonewall Jackson, and Upper Mud lakes; Bluestone Buckhannon, Gauley, Kanawha, Meadow, Monongahela, Mud, and West Fork rivers; Dunkard, Mill, New, Sandy, and Twelve Pole creeks				
Channel catfish (C)	9,600 lbs.	ad	Anawalt, Barboursville, Bear Rocks, Berwind, Castleman Run, Laurel, Middle Wheeling Creek, and Teter Creek, and Tomlinson Run lakes; and Cedar Creek and North Bend ponds				
Channel catfish (P)(C)	42,952	fg	Anderson, Beech Fork, Big Ditch, Chief Cornstalk, Conaway Run, Curtisville, Dog Run, Elk Two-Mile #12, 13, 14, Huey Run, Indian Rocks, Lumberport, Mountwood, O'Brien, Pennsboro, Salt Lick #9, Tracy, Whetstone, and Woodrum lakes				
Largemouth bass (A)	35,000	fg	Curtisville, Coopers Rock, North Bend Lake, and Westover lakes				
Paddlefish (P)	4,779	fg	Kanawha and Ohio rivers				
Walleye (S)(B)(A)	153,086	fg	Beech Fork, Burnsville, East Lynn, R.D. Bailey, Stephens, Stonecoal, Stonewall Jackson, and Sutton; Cacapon, and Kanawha rivers				
Hybrid striped bass (A)	21,850	fg	Ohio River				

(P)	Palestine	Hatchery

(B) Bowden Hatchery

(S) Other States

(C) Commercial Source

(BP) Burnsville Rearing Ponds

(A) Apple Grove Hatchery

fy = fry

fg = fingerlings

ad = adults

## **Coldwater Fish Management**

In 2002-03, selected waters in West Virginia were stocked with 1,102,312 trout weighing 771,024 pounds. Total pounds stocked during the period was 6 percent more than in 2001-02. Adequate rainfall in early October allowed for the normal transfer of trout from Spring Run and Reeds Creek to other hatcheries, thus avoiding overcrowding and low growth rates experienced in drier years. Mild temperatures through most of the winter and an early spring also contributed to above average growth. The overall size of trout stocked was 1.4 fish per pound. A breakdown of trout production by facility is provided on the following page.

The seven state-owned hatcheries produced 768,980 pounds of trout in 2002-03. Except in years when production is affected by drought conditions and disease outbreaks which can reduce production, or ideal conditions with adequate precipitation, normal production averages about 720,000 pounds per year. Given the present state hatchery facilities available, this level of production is considered near capacity. Production greater or lesser than this reflects unusual situations.

The federal hatchery at White Sulphur Springs provided 8,044 pounds of trout during 2002-03. This is the only federal hatchery remaining in West Virginia. The poundage of

trout provided this past year is similar to last year but represents a significant reduction compared to previous years, and is representative of expected trout poundage because of changes in hatchery operations at White Sulphur Springs.

The 2002 fall stocking totaled 31,519 pounds. This was slightly less than stocked in 2001. Thirty-six (36) waters received two stockings each during a 2-week period in October. The fall trout stockings are very popular and provide fishing opportunities through the fall and winter months until the regular spring stocking schedule begins.

Wild trout management continues to receive special attention in West Virginia. The two major parts of this program involve protecting and enhancing native brook trout populations and stocking fingerling trout to establish and maintain wild trout populations in streams that will not support stream reproduction. In 2002-03, a total of 236,530 trout fingerlings, primarily brown trout, was stocked in 69 waters. This program has resulted in considerable expansion of wild trout populations in West Virginia, especially in southern West Virginia waters. Many of these southern trout fisheries are dependent on cold, unpolluted discharges from abandoned mines. The wild trout program provides many anglers with year-round recreational opportunities in areas of West Virginia previously lacking such angling opportunities.

## 2002-03 YEAR TROUT STOCKING

Table 1

Hatchery &	Rain	Rainbow Trout		Golden Trout		Brook Trout		Brown Trout		Total	
Time Period	Weight Number		Weight Number		Weight Number		Weight Number		Weight	Number	
Fall 2002											
Spring Run	12,760	16,740	344	287					13,104	17,027	
Peterburg	11,664	10,586	751	193					12,415	10,779	
Bowden	4,860		140	86					5,000	7,350	
Reeds Creek	1,000								1,000	287	
Sub-total	30,284	34,877	1,235	566					31,519	35,443	
Spring 2003											
Spring Run	131,669	151,787	10,123	11,516					141,792	163,303	
Petersburg	33,688	27,767	2,854	2,029					36,542	29,796	
Edray	107,611	167,036	10,577	15,988	8,060	11,165	24,876	72,288	151,124	266,477	
Ridge	27,429	40,318	3,203	4,673	30,922	49,000			61,554	93,991	
Tate Lohr	23,061	40,338	10,123	11,516					24,118	42,234	
Reeds Creek	145,752	204,941	10,026	17,937	7,360	12,754	8,858	12,613	171,996	248,245	
* White Sulphur	8,044	3,407							8,044	3,407	
Bowden	105,049	153,092	5,754	8,289	21,025	28,037	18,507	29,998	150,335	219,416	
Sub-total	582,303	788,686	43,594	62,328	67,367	100,956	52,241	114,899	745,505	1,066,869	
Total	612,587	823,563	44,829	62,894	67,367	100,956	52,241	114,899	777,024	1,102,312	

<sup>\*</sup>Federal hatchery provided 8,044 pounds